

REMARKS

Reconsideration of the present application is respectfully requested.

I. Status of the Claims

Claims 1, 2 and 7 are withdrawn.

Claims 4-5 and 8-11 are pending.

Claim 4 and 6 are cancelled.

Claim 3 has been amended to more precisely recite the size of the seed crystal. Support for the amended claim language can be found in paragraph [0029] of the published application.

Claim 8 has been amended to change the dependency to claim 3. No new matter has been added.

II. Declaration under 37 C.F.R. § 1.132

Applicant submits the attached signed declaration by Atsushi Okita (Supplemental Declaration) in support of Applicant's traverse of the final rejection of pending claims 3-5 and 8-11. Applicant submits that the attached declaration is responsive to the present final rejection and presents sufficient facts to overcome the specific rejections of the Examiner. Applicant also herein incorporates by reference the original Atsushi Okita ('Okita Declaration') Declaration and its accompanied Experimental Report 1.

III. Rejections under 35 U.S.C. § 103(a)

Claims 3-5 and 8-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. 4,544,793 to Okado in view of JP 61-058812-A.

Claim 3, as amended, recites non-obvious subject matter by reciting a process for preparing a zeolite catalyst having a particle diameter of between 0.05 - 2.0µm. Furthermore the present

invention restricts the particle size of the seed crystal to be added not more than $0.5\mu\text{m}$. The cited prior art, alone or in combination, fails to recite a process employing the characteristics of the constituent parts as provided in the instant invention. Furthermore, any obvious modification of the prior art process would still fail to yield the results of the process as claimed in the instant invention. The prior art fails to provide for a produced catalyst particle diameter within the range provided by the instant claims or to restrict the seed crystal to the enumerated size.

In the November 4, 2010 Office Action, the Examiner stated that the Declaration under §1.132 provided by the Applicant was insufficient to overcome the cited prior art. The Examiner notes that due to the differing amounts of seed crystal in both the instant claims example and the comparative example, it was impossible to determine what effect the difference had on the end yield. Applicant points out that in the instant example, the figure provided, 15.0g, is indicated as equivalent to 10% of the mass of the zeolite catalyst which is synthesized without using a seed crystal. In contrast, the amount of zeolite seed crystal disclosed in the comparative example is equal to 1.5% mass of the initial raw mixture. As such, the Applicant herein provides a supplemental declaration in support of nonobvious nature of processing claimed in the instant application. The Supplemental Declaration clearly points out that in the instant examples the amount of seed crystal used is 15g, which is equivalent to 10 % of the mass of the zeolite catalyst synthesized without using a seed crystal, and it corresponds to 3% of the raw material mixture. In the Comparative example the amount of seed crystal used is 3g, which is equivalent to 1.5% of the raw material mixture. Thus, in both examples the size of the starting seed crystals are the same and a larger percentage is used in the instant process, but nevertheless, the size of the end result of the particles according to the instant invention is in the range from 0.05 to $2\mu\text{m}$, while the prior art is $5.0\mu\text{m}$. Thus, more starting seed does not result in larger crystals in the final material.

As such, it is clear that the amount of seed crystal added to the raw mixture is not a principal controlling factor in the resulting size of the catalyst. Therefore Applicant respectfully requests that the Examiner reconsider the Experimental Report 1 provided by the Applicant. Specifically the

Applicant points out that the purpose of the Experimental report is to highlight the differences between the instant claims and those of the prior art. The instant claims require the particle size of the seed crystals to be no more than 0.5 μ m. Therefore, it is irrelevant as to the amount of seed crystal or raw material provided. What is critical is both the size of the average particle diameter of the seed crystal resulting from the Si/Al atomic ratio.

As provided in the November 4, Office Action, the JP'812 reference indicates that the average particle diameter is not more than 1.5 microns. Applicant points to the Experimentation Report 1 (attached to and referred to in the Okita Declaration), page 1, ¶¶ 2-4, which clearly shows the results of the process as described in the pending claims. Particularly, ¶ 2 and Fig. 2 clearly show the process as described by the present invention yielding a MFI structure zeolite having an average particle size of 1.5 μ m. Also see Okita Declaration. Applicant also points to Experimentation Report 1, pg. 2, which details a zeolite catalyst produced by a process combining the '812 and Okado references. As shown at pg. 2, ¶¶ 4-7, the catalyst particles that result from a combination of the '812 and Okado references have an average particle size of 5.0 μ m. See Atsushi Declaration pg. 3. The Experimental Report 1 also demonstrates that the combined prior art catalyst is produced using the same size seed crystal (0.5 μ m) as used in the present claim. Atsushi Declaration, pg. 2-3. It is also clear that the variables not directly specified by the prior art are identical to the present invention (i.e. the catalyst precursor was agitated at 160°C for 18 hours, then dried at 120°C for 5 hours and then heated at 520°C for 10 hours.) Therefore, the produced catalyst is attributable to the difference between non-obvious subject matter of the pending claims and the cited prior art. Fig. 3 clearly shows that the particles produced by a combination of the prior art are significantly larger than those produced by the instant claims.

Pending claim 3 of the present application recites a seed crystal particle having a diameter of not more than 0.5 μ m. Experimentation Report 1 clearly shows the cited prior art, in any obvious combination, fails to teach a catalyst particle diameter having this range. A person skilled in the art could not employ only "routine experimentation" and hope to achieve the range described in amended claim 3. Specifically, in order to achieve the range as described in claim 3, there would be

need to be a directed effort to obtain that range. The Experimental Report 1 clearly shows that combining the prior art references results in an average particle diameter that is 3 times that which is found in the amended claim 3. While it is true that the prior art and the instant claims have the same utility, the experimental evidence clearly shows that without "undue experimentation" the two processes do not produce the same product. One skilled in the art would need to modify a number of variables relating to the composition before a similar result would be obtained. Additionally, one skilled in the art would need to employ a seed crystal with characteristics similar to those disclosed in the instant patent. The Examiner has failed to provide prior art, alone or in combination that provides these modified characteristics.

The combined prior art fails to teach the complete invention as envisioned by amended claim 3. Therefore, it is impossible for the cited prior art to render claim 3 obvious. Furthermore, the pending claims 4-5 and 8-11 depend directly or indirectly from claim 3. As such, those claims are similarly non-obvious in view of the cited prior art.

CONCLUSION

In view of the above discussion, applicant believes the pending application is in condition for allowance. It is believed that all of the stated grounds of rejections have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections.

It is believed that no fees are required with this submission; however, if it should be determined that fees are required, the Commissioner is hereby authorized and requested to charge any needed fees (to include extension-of-time fees) to Deposit Account No. 50-4570, and Applicants hereby petition for any needed extension of time.

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Respectfully submitted,

By 

Jordan G. Garner
Registration No.: 60148
LEASON ELLIS LLP.
81 Main Street, Suite 503
White Plains, New York 10601
(914) 288-0022(Tel)
(212) 288 0023(Fax)
Attorneys/Agents For Applicant